## Hazard Management Specialists

July 2, 1987

Mr. Bryant Adams
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Post Office Box 518
Ridgefield, Washington 98642

Dear Bryant:

This letter will summarize our comments to the EPA's review of our closure plan. This closure plan addressed soil, water, and waste sampling, and the installation of groundwater monitoring wells. It was submitted to the EPA on February 22, 1987. The EPA responded to the plan on June 22, 1987. The items are addressed in the order in which they occurred in the letter.

The review letter from EPA claims that the hydrogeologic characterization of the site is not addressed. Section VI of the plan, on pages 18-21, addresses well installation and testing. This section outlines the plan to drill two 6-inch wells at the assumed up-gradient and down-gradient locations. With the two six-inch wells in place, pumping tests can be performed to ascertain groundwater flow direction. This is stated in the closure plan in the second paragraph of page 19. Additionally, the second paragraph on page 18 discusses the possibility of perched aquifers underneath the landfill. This section addresses the plan to collect and document perched water during the well drilling process.

The proposed groundwater monitoring plan was purposefully nonspecific in order to allow for the best engineering, decisions to be made in the course of the well installation. The plan proposes to monitor the uppermost continuous aquifer underlying the site, as stated in 40 CFR 265.90 (a). The plan does not state where this aquifer lies, but if necessary, wells will be completed to the depth of the known aquifer, the Troutdale formation. In the third paragraph of page 18, it state that "wells to monitor the uppermost aquifer will be installed". If the local drinking water wells are any indication of the uppermost continuous aquifer, the wells will be approximately 150 deep.



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Test drillings, borehole logs, and lysimeter installation logs were performed and prepared by Sweet. Edwards in their 1983 report. These logs did not reveal information that would be contradictory to the proposed plan. It was assumed that EPA had possession of these old reports from the prior closure. These logs were used in the development of the closure plan.

As stated earlier, the pumping tests for aquifer characterization with respect to groundwater flow were specified on page 19 of the submitted closure plan.

The last paragraph on page 2 of the EPA letter appears to cite a failure or deficiency in the plan because it proposed the minimum acceptable number of monitoring wells. It is not realistic to cite a deficiency before the monitoring system exists, because the process of well drilling sample collection, and pump tests will reveal the adequacy of the plan. If at that time a more extensive investigation is required, it will be conducted. In consideration of the low degree of hazard represented by the site, to propose any more than the minimum acceptable detection system is not based on sound engineering judgement. The landfill has an excellent warning system in the toe drain collection network. Since the landfill has been constructed, the leachate from the cell has never violated any hazardous waste standards and is essentially equivalent to drinking water standards.

In the first paragraph on page 3 of the EPA letter, it state that "the plan does not address the frequency of analysis for pentachlorophenol or arsenic." The closure plan as submitted states on page 20 that "RBT site-specific compounds include PCP and arsenic." Table 2 on page 21 specified that RBT site-specific compounds will be analyzed quarterly for one year, and semi-annually thereafter.

We feel that neither the EPA nor the consultant read the closure plan and the four months' review time offered them ample time to carefully study the submitted report. We are prepared to meet with you and the agency staff to discuss these problems. Please call me if you have any questions.

Elizabeth Thuth for
Bryan A. Johnson

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